

40 561

DEVICE FOR TRANSFERRING OR THREADING BEGINNINGS OF A BAND

Specification

The present invention pertains to a device for transferring or threading beginnings of a band, especially extremely thin bands, from a band machining or band processing unit to a or into a further processing unit or winding reel.

Devices of this type have become known in a wide variety of embodiments.

Thus, such a device is disclosed in DE 40 18 950 A1, wherein a band threading carriage is provided, which is arranged downstream of a reel. The band threading carriage has a pivotable clamping device, which is provided on the front end with a bit. With this [band threading carriage], the coil of a band located on the reel can be opened, and then the beginning of the band is immediately hydraulically or magnetically detected and transferred by the carriage, which moves lengthwise, to a subsequent band machining or band processing unit, i.e., e.g., it is threaded there.

A lengthwise moving carriage has likewise become known from DE-AS 26 04 909, wherein this [carriage] detects and transfers the beginning of the band unwinding from the coil also by means of clamping. Corresponding means are also used for transferring the band coming out of a roll stand to a winding reel or threading into same.

These devices are suitable for normal band thicknesses. However, so-called extremely thin bands cannot be handled with these. These bands are defined as bands with a thickness less than 0.2 mm. Up to now, a manual handling is necessary for transferring or threading these bands, since advancing the thin band over a longer distance, as may occur, e.g., between two roll stands or between the outlet from a roll stand and the next reel, is not possible. In practice, the band had to be pushed or to be carefully pulled, whereby it was not possible to prevent the band from being displaced uncontrolled out of the center of the line of movement. Of course, the fact that the space between two unit parts is often so narrow that access is only possible under certain conditions also plays a role.

Such a displacement may, however, lead to the band winding onto the reel at an angle during the winding up. This in turn leads to either folds occurring on the reels, which inevitably damage the reel, or else telescoping of the band occurs.

Therefore, the object of the present invention is the creation of a device, with which especially the handling of extremely thin bands during transferring or threading is possible, and preferably automatically.

This object is accomplished according to the present invention with a device for transferring or for threading beginnings of a band, especially of extremely thin bands, from a band machining or band processing unit to a or into a further processing unit or winding reel, consisting of a transfer table, whose width corresponds at least to the width of a band to be conveyed, and whose table surface has a lengthwise slot in the conveying direction of the band that is narrower than the minimal width of a band to be conveyed, through which the upper run of a conveyor belt rotating in the conveying direction of the band is pivotable above the surface of the transfer table and can be connected by external force to the band to be conveyed for a while.

Unlike the state of the art described in the introduction, the band is thus not gripped, but rather it is placed by external force on an endlessly running conveyor belt for a while. Such a placement can be carried out with considerably more care than the gripping used up to now.

Moreover, it is essential that the width of the conveyor belt is smaller than the minimum width of the band to be conveyed, so that, in principle, only a very narrow range of the band is detected for conveying.

A distinction must now be made that the bands to be handled may have different properties, and they may be magnetic or non-magnetic.

If it is a magnetic band material, then magnets, which pull the beginning of the band against the conveyor belt, as well as the top side of the upper run of the conveyor belt, are arranged under the upper run of the endlessly running conveyor belt. If permanent magnets are used for this, their action occurs only as long as the conveyor belt is located in the pivoted-out state, i.e., above the table surface. If electromagnets are used, then the action only occurs, if the electromagnets are activated. It is important that the action only occur for a while. After

transferring and/or threading into a next unit, the separation of the conveyor belt from the band takes place, so that the band runs freely between the previous outlet and the next inlet.

If the band is made of non-magnetic material, then suction nozzles are arranged under the upper run of the conveyor belt, and the conveyor belt itself is provided with openings or holes. In this case, the extremely thin band is placed by external force onto the top side of the upper run of the conveyor belt by partial vacuum for a while. Thus, a rapid conversion or exchange between these types of conveying can take place, electromagnets and suction nozzles may also be installed together under the upper run of the conveyor belt.

Advantageously, the entire device is arranged pivotably, i.e., for use the conveyor belt is moved into the plane of conveying, and pivoted out of same when not needed, so that it does not interfere with the next course of movement.

The present invention shall be explained below in an exemplary embodiment, wherein only the basic principle is schematically shown in the drawings, in which

Figure 1 shows a top view of the transfer table shown in a simplified manner, and

Figure 2 shows a schematic side view of the pivotable conveyor belt.

In the figures, the transfer table, which has a slot 8, is designated by 1. The maximum band width X and the minimum band width Y are indicated in Figure 1, so that it is evident that the slot is narrower than the minimum band width of a band to be conveyed.

A roll stand (or a last stand of a mill train) is indicated by 3. The dash-dot line 4 indicates the center of the roll and also the conveying plane of the exiting band. The device according to the present invention for transferring or threading an extremely thin band has an endlessly running conveyor belt designated by 7.

This conveyor belt is arranged pivotably, which has been indicated by the reference number 2. The two positional views show that in this way the conveyor belt can be moved in or out of the conveying plane, i.e., it is raised above the surface or table surface of the transfer table 1 or lowered. Under the upper run of the conveyor belt 7 are located either magnets or suction

nozzles 6, by means of which the band exiting from the stand - or stated more exactly the beginning of this band - can be placed by external force on the top side of the upper run of the conveyor belt 7 for a while, i.e., as long as the upper run of the conveyor belt is in its position above the table surface, so that, by moving the conveyor belt, the band to be conveyed, especially the beginning of the band, is also moved.